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UNITED STATES PATENT AND TRADEMARK OFFICE

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BOARD OF PATENT APPEALS AND INTERFERENCES

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*Ex parte* CARMEN MARTIN RIVERA,  
ESTRELIA CABRERO GOMEZ and GUY M. POLLAUD

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Appeal 2011-005489  
Application 10/554,213  
Technology Center 1700

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*Before:* FRED E. McKELVEY, SALLY GARDNER LANE, and  
SALLY C. MEDLEY, *Administrative Patent Judges.*

McKELVEY, *Administrative Patent Judge.*

**DECISION ON APPEAL**

**Statement of the case**

1           3M Company (formerly known as Minnesota Mining and Manufacturing  
2 Company) and its affiliate 3M Innovative Properties Company (collectively  
3 referred to herein as “3M”), the real parties in interest (Brief, page 2), seek review  
4 under 35 U.S.C. § 134(a) of a final rejection mailed 2 March 2010.

5           The application was filed on 20 June 2006.

6           The application is based on International Application PCT/US04/10198,  
7 filed 2 April 2004, and claims benefit of United Kingdom patent application  
8 0309329.1, filed 25 April 2003.

9           The application was published as U.S. Patent Publication 2007/0026754.

10          Claims 21-34 are in the application.

11          The Examiner relies on the following evidence.

Beardsley (which is believed to be assigned to 3M Innovative Properties Company)—see (71)	WO 01/28741 A1	International Publication Date 26 April 2001
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12  
13          Beardsley is prior art under 35 U.S.C. § 102(b).

14          We refer to:

Hoover assigned to 3M	U.S. Patent 2,958,593	1 November 1960
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15  
16          We have jurisdiction under 35 U.S.C. § 134(a).

**Findings of fact**

The following findings of fact are supported by a preponderance of the evidence.

Additional findings as necessary may appear in the Discussion portion of the opinion.

The invention

The invention relates to nonwoven fibrous scouring pads suitable *inter alia* for domestic use. Specification, page 1:3-4.

More specifically, the invention relates to [italics and bracketed matter added (the US “fibers”, as opposed to the UK “fibres”, will be used in this opinion for consistency)]:

a three-dimensional non-woven web of entangled fibers bonded to one another at their mutual contact points by a pre-bond resin, wherein *a majority by weight of the fibers* comprise natural fibers, and the bonded web has a maximum density of 50 kg/m<sup>3</sup> [3.12 lbs./ft<sup>3</sup>] (preferably 30 kg/m<sup>3</sup> [1.87 lbs./ft<sup>3</sup>]). A plurality of abrasive particles are adhered to the fibers of the bonded web by a make-coat resin. Specification, page 2:18-22.

The bonded web has a network of many, relatively large, intercommunicated “voids” that comprise the greater amount, *i.e.*, more than 50% and preferably substantially more than 50%, of the volume occupied by the web. Specification, page 3:23-26.

Fig. 1, reproduced below, shows a view of a scouring pad in accordance with the invention.

Fig. 2, also reproduced below, illustrates diagrammatically on an enlarged scale the structure of a scouring pad in accordance with the invention.

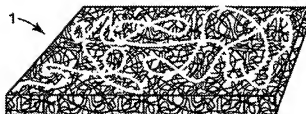


Fig. 1

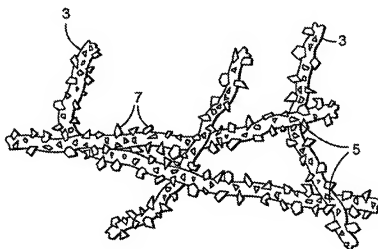


Fig. 2

With reference to Fig. 1 and Fig. 2:

[t]he fibers 3 of the pad 1 are bonded to one another at their mutual contact points 5 by a pre-bond resin . . . , and the pad additionally contains abrasive particles 7 that are adhered to the fibers by a make-coat resin . . . .

The fibers 3 comprise at least 80% by weight of natural fibers, preferably vegetable fibers such as coco, sisal, and hemp fibers. Other

natural fibers that could be used include those of cotton, jute, flax and wool.

Specification, page 4:11-17.

Claims on appeal

Independent Claim 21 and dependent Claims 22-34 are in the application on appeal.

In presenting the appeal, 3M does not argue the separate patentability of any dependent claim.

Accordingly, we decide the appeal on the basis of Claim 21.

Claim 21, which we reproduce from the Claim Appendix of the Appeal Brief (page 6), reads [some indentation, bracketed matter and drawing numbers added]:

A scouring material comprising:

- [1] a three-dimensional non-woven web of entangled [Fig. 1 1] fibers [Fig. 2 3] bonded to one another at their mutual contact points [Fig. 2 5] by a pre-bond resin,
- [2] wherein greater than 50% by weight of the fibers comprise natural fibers, and
- [3] the bonded web has a maximum density of 50 kg/m<sup>3</sup>; [Specification, page 2:20] and
- [4] a plurality of abrasive particles [Fig. 2 7] adhered to the fibers of the bonded web by a make-coat resin [not shown].

While Claim 21 does not mention “voids” *per se*, a substantial portion of the overall volume of the scouring material is made up of voids between fibers 3. To help the reader better understand physical structure of the scouring pads, reference

is made to (1) Fig. 1, reproduced below, of Hoover, a 3M patent naming Hoover as inventor and (2) the accompanying discussion (col. 3:26-48). Fig. 1 is said to show “extreme openness and low density” with a void volume exceeding 90%.



Hoover Fig. 1

The Hoover patent is mentioned in both the application on appeal (page 1:8-9) and Beardsley—the prior art relied upon by the Examiner (page 4:30-31).

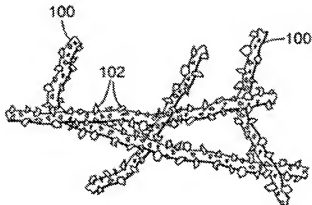
The rejection

The Examiner has rejected all the claims as being unpatentable under 35 U.S.C. § 103(a) over Beardsley.

Prior art--Beardsley

Beardsley relates to an abrasive article (*i.e.*, a scouring pad). Page 1:4.

Reproduced below is Beardsley Fig. 4, which “illustrates a preferred coating on a fibrous nonwoven substrate.” Page 4:9.



Beardsley Fig. 4

The reader will immediately see the similarity between Beardsley Fig.4 and 3M Fig. 2 in the application on appeal.

Shown in Fig. 4 is what Beardsley refers to as a “foraminous substrate **100**” having thereon “particles **102**”. See, e.g., page 16:7-8.

Stated in the language of the application on appeal, Beardsley describes nonwoven fibers **100** with abrasive particles **102** thereon.

The nonwoven fibers which can be used “include both [1] natural and [2] synthetic fibers and [3] mixtures thereof.” Page 5:7-8 [bracketed matter added].

Suitable natural fibers are said to include cotton, wool, jute and hemp. Page 5:12-13.



1           Whatever fiber (synthetic or natural) is used, it must be selected so that it  
2   does not melt or decompose at temperatures at or below the melting or curing  
3   temperatures of the adhesive used as a fiber and abrasive bonding agent—*i.e.*, a  
4   pre-bond resin. Page 5:13-15.

5           Pre-bond resins are known as are described *inter alia* in Hoover.  
6   Page 6:16-22.

7           Like the invention on appeal:

8                   [T]he fibers are bonded together at their mutual contact points to  
9           provide an open, low density, lofty web where the interstices between  
10          fibers are left substantially unfilled by resin or abrasive. For typical  
11          applications, the void volume of the finished nonwoven abrasive  
12          article preferably is in the range of about 75% to about 95%.

13   Page 7:1-4.

14          Beardsley goes on to explain why void volume is significant. Page 5:5-8.

15          The abrasive particles preferably have a median particle diameter of 30-60  
16   microns and can be made from aluminum oxide. Page 12:29-32.

### 17                                   **Discussion**

18          The Examiner held that the subject matter of Claim 21 would have been  
19   obvious to one skilled in the art. We agree.

20          The Examiner found that Beardsley does not describe the density of its  
21   scouring pads. However, the Examiner correctly notes that “void volume” and  
22   “density” are “inversely related, in that material having a high density would have  
23   a low void volume and a material having a low density would have a high void  
24   volume.” Answer, page 4. In mathematical terms:

Density =  $f(1 / \text{Void Volume})$ .

In the Examiner's view, the Beardsley desire to have a high void volume means that Beardsley (while not saying so in so many words) is describing products with a low density.

The PTO does not have means for making the Beardsley product and determining density. Nor has 3M favored the PTO with any density measurements of the Beardsley products. However, several points surface from the record itself. In general, the structures of the Beardsley and 3M products are similar. See 3M Fig. 2 and Beardsley Fig. 4. 3M indicates that the void volumes in its product are preferably substantially more than 50%, Specification, page 3:25. Beardsley indicates that the void volumes in its product are preferably in the range of about 75% to 95%. Page 7:4. On this record, a permissible inference is that if the density of 3M products has a density of less than  $50 \text{ kg/m}^3$  then so do the Beardsley products. While it had an opportunity to show otherwise, 3M elected not to do so. *In re Best*, 562 F.2d 1252, 1254, 1255 (CCPA 1977) ("[w]here, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product"; PTO has no ability to manufacture products or to obtain and compare prior art products). *See also In re Fitzgerald*, 619 F.2d 67, 70 (CCPA 1980).

3M broadly maintains that Beardsley does not contain a "teaching, suggestion or guidance to one of skilled the art for each and every element of the claimed scouring material." Brief, page 3.

1           3M's principal point is that its scouring material "has a large portion of  
2   natural fibers." Brief, page 3. 3M goes on to contend that "it was surprising that  
3   use of a large amount of natural fibers, greater than 50% by weight, could result in  
4   an open, lofty, three-dimensional nonwoven having the claimed density." *Id.*  
5   Why? The answer according to 3M appears on page 2:4-14 of the Specification  
6   [italics added]:

7           Scouring materials formed solely from natural vegetable fibers are  
8           known and include, for example, traditional scourers formed from the  
9           fibrous parts of *gourds* or *palm leaves*. Such scouring materials will  
10          degrade in an environmentally-acceptable manner but suffer from the  
11          disadvantage that, when made in the traditional manner, they cannot  
12          be mass produced to a uniform standard. Moreover, natural vegetable  
13          fibers have little or no resilience (unlike the crimped synthetic fibers  
14          that are used to manufacture nonwoven abrasive/scouring materials)  
15          so that, even if they are processed into a more uniform nonwoven  
16          web, it is difficult to incorporate abrasive mineral into the web  
17          without crushing the fibers and, as a result, compacting the web to an  
18          undesirable extent. Consequently, domestic scouring materials  
19          formed from natural fibers have tended to be less attractive to the  
20          consumer than those that are formed from synthetic fibers.

21          We decline to accord the page 2:4-14 statement much, if any, weight. *First*,  
22   it mentions specifically only fibrous parts of *gourds* or *palm leaves*. Beardsley, on  
23   the other hand, mentions cotton, wool, jute and hemp. We have not been told the  
24   relative compression ability of gourd and palm leave fibers versus cotton, wool,

jute and hemp fibers. *Second*, and perhaps more important, is that the page 2:4-14 statement is contradicted by 3M's "witness" Beardsley who "testifies" in rather plain and straightforward terms that "natural fibers" and mixtures of natural fibers with synthetic fibers may be used to make the Beardsley scouring pads. The inconsistency between the page 2:4-14 statement and Beardsley has not been explained.

3M next discusses Beardsley's desire to avoid releasing physical and chemical contaminants and therefore "is especially suited for use in critical or controlled environment such as clean rooms". Brief, page 3. Nothing in Claim 21 precludes the use of 3M's scouring pad in a clean room and nothing in Beardsley excludes use of the Beardsley scouring pad in a non-clean room.

3M further maintains that Beardsley gives no specifics on the amount and quantity of natural fibers which can be used to create the scouring pads. 3M is concerned that use of a natural fiber is "mentioned in passing and is not preferred or exemplified." Brief, page 4. *First*, Beardsley explicitly states that the scouring pads can be made from natural fibers or mixtures of natural and synthetic fibers. One skilled in the art would understand the "natural fibers" statement to mean 100% natural fibers and the mixtures statement to mean ratios of natural and synthetic fibers, *e.g.*, of 1-99% natural fibers to 99-1% synthetic fibers. *Second*, lack of preference or exemplification does not mean that use of natural fibers is not described. *In re Burckel*, 592 F.2d 1175, 1179 (CCPA 1979) (a prior art disclosure is not limited to its preferred embodiments or specific working examples); *In re Mills*, 470 F.2d 649, 651 (CCPA 1972) ((1) we find no merit in the argument that the disclosure of propylene is so submerged in the prior art reference, and the

1 teaching of the use of ethylene so predominant, that the prior art reference cannot  
2 be said to place foams composed of the claimed ingredients in the possession of  
3 the public; (2) all the disclosures in a reference must be evaluated, including non-  
4 preferred embodiments, and a reference is not limited to the disclosure of specific  
5 working examples). *See also In re Chapman*, 357 F.2d 418, 424 (CCPA 1966).

6 Nothing in Beardsley—says 3M—would teach a person skilled in the art  
7 “who is attempting to reduce the environmental impact of discarding synthetic  
8 scouring materials” to develop a scouring pad made of natural fibers. Brief,  
9 page 4. But, Beardsley teaches using natural fibers and does not limit any use to  
10 any particular field.

11 3M argues that Beardsley is non-enabling. To be sure, a reference used in a  
12 § 103 context must be enabling. *In re Hoeksema*, 399 F.2d 269, 274 (CCPA  
13 1968). 3M maintains that there is no disclosure in Beardsley to enable one skilled  
14 in the art to make the claimed scouring pad having a high amount of natural fibers.  
15 Brief, page 4. *See also* page 3, first full paragraph, last line. 3M’s argument is  
16 sans an analysis of why Beardsley is non-enabling. Something more than a mere  
17 assertion of counsel is necessary to challenge the enablement of a reference. For  
18 example, 3M does not address—from a technical point of view—why Beardsley is  
19 non-enabling. Moreover, 3M has failed to explain how it could say when it filed  
20 Beardsley that scouring pad could be made with natural fibers, but now says they  
21 cannot. An argument of counsel is not evidence; Beardsley is evidence. We credit  
22 the Beardsley evidence over 3M counsel’s argument.

1 We have considered 3M's remaining arguments and find none that warrant  
2 reversal of the Examiner's rejection. *Cf. Hartman v. Nicholson*, 483 F.3d 1311,  
3 1315 (Fed. Cir. 2007).

4 **Decision**

5 Upon consideration of the appeal, and for the reasons given herein, it is  
6 ORDERED that the decision on the Examiner rejecting claims 21-34  
7 is *affirmed*.

8 FURTHER ORDERED that no time period for taking any subsequent  
9 action in connection with this appeal may be extended under 37 C.F.R.  
10 § 1.136(a)(1)(iv).

11 **AFFIRMED**

KMF